

ESSENTIAL POWER MASSACHUSETTS, LLC

c/o William P. Short III
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March 4, 2017

Low Impact Hydropower Institute
c/o Ms. Dana Hall
Deputy Director
P. O. Box 194
Harrington Park, New Jersey 07640

Re: Application of Gardners Falls Project for Re-Certification by the Low Impact Hydropower Institute

Dear Ms. Hall:

Attached please find an application for re-certification by the Low Impact Hydropower Institute ("LIHI") of the Gardners Falls Project (the "Project" or the "Facility") of Essential Power Massachusetts, LLC ("Essential"). In February 2011, North America Energy Alliance, LLC ("NAEA"), the then name of the current owner of the Project, filed its application for certification of the Project by LIHI. On October 31, 2011, after a thorough review, LIHI certificated the Gardners Falls Project as low impact for a five-year term, effective February 18, 2011 and expiring February 18, 2016. Its certificate number is 80. On December 22, 2015, June 30, 2016, and February 28, 2017, Gardners Falls Project was granted an extension of the current certificate term with a new expiration date of August 16, 2016, April 20, 2017 and November 30, 2017, respectively. Copies of all extension letters are available for review on the portion of the LIHI website devoted to the Project

For purposes of responding to inquiries regarding this re-certification application, persons should contact the following:

Primary Contact

William P. Short III
Consultant
44 West 62nd Street
P.O. Box 237173
New York, New York 10023-7173
(917) 206-0001 Office
(201) 970-3707 Cell
w.shortiii@verizon.net

Secondary Contact

Kim Marsili
General Manager
Essential Power Massachusetts, LLC
15 Agawam Avenue
West Springfield, Massachusetts 01089
(413) 730-4721 Office
(413) 426-4125 Cell
Kim.Marsili@essentialpowerllc.com

This application relies materially on the documents and descriptions initially filed in the initial application for certification. As such, reference will be made to those documents and descriptions rather than simply restate them here in this re-certification. Accordingly, any reviewer is strongly urged first to read the initial application for certification before reviewing the balance of this application.

In certain sections of this application, very little has changed in the initial application since 2011. Where it has, it is updated and noted. The latest compliance filing or periodic public reports have been added. Where the application calls for new material that too has been provided.

We request that you review this application and let us know if anything additional is needed in order to place this application in front of the board of directors of LIHI for consideration.

Sincerely yours,

William R. Short 

enclosures

Table B-1. Facility Description Information for [Gardners Falls Project](#) (LIHI #80 if a recertification).

<i>Information Type</i>	<i>Variable Description</i>	<i>Response(and reference to further details)</i>
Name of the Facility	Facility name (use FERC project name if possible)	Gardners Falls Project
Location	River name (USGS proper name)	Deerfield River
	River basin name	Deerfield River
	Nearest town, county, and state	Buckland and Shelburne in Franklin County, Massachusetts
	River mile of dam above next major river	river mile 15.8 for powerhouse; river mile 16.3 for dam
	Geographic latitude	43° 35'21.56" N
	Geographic longitude	72° 43'35.66" W
Facility Owner	Application contact names (IMPORTANT: you must also complete the Facilities Contact Form):	William P. Short III
	- Facility owner (individual and company names)	Essential Power Massachusetts, LLC
	- Operating affiliate (if different from owner)	Essential Power Massachusetts, LLC
	- Representative in LIHI certification	Kim Marsili
Regulatory Status	FERC Project Number (e.g., P-xxxxx), issuance and expiration dates	P-2334-001; April 4, 1997; March 31, 2037
	FERC license type or special classification (e.g., "qualified conduit")	New License
	Water Quality Certificate identifier and issuance date, plus source agency name	Water Quality Certification Gardners Falls Hydroelectric Project, FERC Project No.-2334-01, December 14, 1994, Massachusetts Department of Environmental Protection
	Hyperlinks to key electronic records on FERC e-library website (e.g., most recent Commission Orders, WQC, ESA documents, etc.)	Copies of key records are attached to this application or are available on the LIHI website under the application filed for certification in February 2011.
Power Plant Characteristics	Date of initial operation (past or future for operational applications)	1904 for initial operations and 2017 for resumed operations
	Total name-plate capacity (MW)	3.58 MW
	Average annual generation (MWh)	8,383 MWh (average for 2002-2016)
	Number, type, and size of turbines, including maximum and minimum hydraulic capacity of each unit	Four turbines; Unit #2: Rodney Hunt; 783.7 hp; 230 cfs Maximum hydraulic capacity

		Unit #3: S. Morgan Smith; 1450 hp; 370 cfs Maximum hydraulic capacity Unit #4: S. Morgan Smith; 1450 hp; 370 cfs Maximum hydraulic capacity Unit #5: S. Morgan smith; 1700 hp; 450 cfs Maximum hydraulic capacity
	Modes of operation (run-of-river, peaking, pulsing, seasonal storage, etc.)	Limited pond-and-release (maximum 1.8 feet drawdown)
	Dates and types of major equipment upgrades	1914 Unit #3 Turbine-Generator 940 KW 1914 Unit #4 Turbine-Generator 940 KW 1925 Unit #5 Turbine-Generator 1,300 KW
	Dates, purpose, and type of any recent operational changes	None
	Plans, authorization, and regulatory activities for any facility upgrades	None
Character-istics of Dam, Diversion, or Conduit	Date of construction	1904 initial; 1914 first expansion; 1925 second expansion
	Dam height	a maximum height of 30 feet at permanent crest elevation of 332.79 feet mean sea level (msl) and 32 feet at flashboard crest elevation 334.79 feet msl,
	Spillway elevation and hydraulic capacity	332.79 feet msl; 50,000 cfs; however, during Hurricane Irene it is estimated that the spillway handled over 75,000 cfs
	Tailwater elevation	295.8 feet MSL
	Length and type of all penstocks and water conveyance structures between reservoir and powerhouse	The major project works consist of a dam and impoundment, a power canal, an intake structure and a powerhouse. Specifically, the Project consists of: (1) 337 foot-long, 30 foot-high dam, (2) an impoundment 3,200 feet long, with a surface area of 21 acres, 190 acre-feet gross storage and 37.2 acre-feet usable storage, (3) a brick and concrete powerhouse equipped with four turbine-generator units with total capacity 3.58 MW, (4) a 1,300-foot power canal 31 feet wide and 15 feet deep, and (5) a double circuit 13.8 KV transmission line connecting the Gardners Falls project to the Montague substation.
	Dates and types of major, generation-related infrastructure improvements	1914 Unit #3 Turbine-Generator 940 KW 1914 Unit #4 Turbine-Generator 940 KW 1925 Unit #5 Turbine-Generator 1,300 KW
	Designated facility purposes (e.g., power, navigation, flood control, water supply, etc.)	Power generation
	Water source	Deerfield River
	Water discharge location or facility	Powerhouse tailrace

<i>Characteristics of Reservoir and Watershed</i>	Gross volume and surface area at full pool	<u>A 3,200 foot-long impoundment with a surface area of 21 acres, 190 acre-feet of gross storage and 37.2 acre-feet of usable storage</u>
	Maximum water surface elevation (ft. MSL)	<u>Permanent crest elevation of 332.79 feet mean sea level (msl) with a flashboard elevation of 334.79 feet msl,</u>
	Maximum and minimum volume and water surface elevations for designated power pool, if available	<u>190 acre-feet of maximum volume and 152.8 acre feet of minimum volume; maximum water surface elevation at dam crest of 332.79 feet mean sea level (msl) with a maximum flashboard water surface elevation of 334.79 feet msl,</u>
	Upstream dam(s) by name, ownership, FERC number (if applicable), and river mile	<u>The Gardners Falls project is situated among nine other hydroelectric facilities located on the Deerfield River. Eight of the other nine facilities are owned and operated by an affiliate of TransCanada Corporation, and are licensed as one project ("Deerfield River Project," FERC No. 2323). The Deerfield River Project consists of one storage facility (Somerset Development) and seven hydroelectric facilities (Searsburg, Harriman, and Sherman Developments, and the Deerfield No. 5, No. 4, No. 3 and No. 2 Developments). A pumped-storage project (Bear Swamp Project), owned by Bear Swamp Power Company, LLC and operated by Brookfield Renewable Power, is licensed by the FERC as Project No. 2669 and is located below the Deerfield No. 5 development.</u> <u>Somerset river mile 66.0</u> <u>Searsburg river mile 60.3</u> <u>Harriman river mile 48.5</u> <u>Sherman river mile 42.0</u> <u>Deerfield No.5 river mile 41.2</u> <u>Bear Swamp river mile 39.0</u> <u>Fife Brook river mile 37.0</u> <u>Deerfield No.4 river mile 20.0</u> <u>Deerfield No.3 river mile 17.0</u>
	Downstream dam(s) by name, ownership, FERC number (if applicable), and river mile	<u>Deerfield No.2 river mile 12.2</u>
	Operating agreements with upstream or downstream reservoirs that affect water availability, if any, and facility operation	<u>None</u>
	Area inside FERC project boundary, where appropriate	<u>59.90 acres of which approximately 21 acres are impoundment and the balance of 38.80</u>

		<u>acres are land.</u>
Hydrologic Setting	Average annual flow at the dam	<u>1,212 cfs at dam; 1,349 cfs at gage</u>
	Average monthly flows	<u>January 1,349 cfs at dam; 1,500 cfs at gage</u> <u>February 1,322 cfs at dam; 1,470 cfs at gage</u> <u>March 1,880 cfs at dam; 2,090 cfs at gage</u> <u>April 2,581 cfs at dam; 2,870 cfs at gage</u> <u>May 1,484 cfs at dam; 1,650 cfs at gage</u> <u>June 917 cfs at dam; 1,020 cfs at gage</u> <u>July 568 cfs at dam; 632 cfs at gage</u> <u>August 573 cfs at dam; 637 cfs at gage</u> <u>September 586 cfs at dam; 651 cfs at gage</u> <u>October 829 cfs at dam; 922 cfs at gage</u> <u>November 1,115 cfs at dam; 1,240 cfs at gage</u> <u>December 1,367 cfs at dam; 1,520 cfs at gage</u>
	Location and name of relevant stream gauging stations above and below the facility	<u>Lat 42° 32'09", long 72° 39'14", Franklin County, Hydrologic Unit 01080203, on right bank 0.4 mi downstream from South River, 1.2 mi west of West Deerfield, 2.5 mi west of Deerfield, and 9.2 mi upstream from mouth.</u>
	Watershed area at the dam	<u>501 square miles at dam; 557 square miles at gage</u>
Designated Zones of Effect	Number of zones of effect	<u>Three</u>
	Upstream and downstream locations by river miles	<u>Dam -- river mile 16.3</u> <u>Tailrace – river mile 15.8</u>
	Type of waterbody (river, impoundment, bypassed reach, etc.)	<u>Impoundment – above river mile 16.3</u> <u>Bypassed Reach – between river mile 15.8 and river mile 16.3</u> <u>River – below river mile 15.8</u>
	Delimiting structures	<u>1) Impoundment – from the tailrace of Deerfield No.3 to dam of Gardners Falls</u> <u>2) Bypassed Reach – Dam to tailrace of Gardners Falls</u> <u>3) River -- Tailrace of Gardners Falls to Impoundment of Deerfield No.2</u>
	Designated uses by state water quality agency	<u>Aquatic Life with Alert Status, Primary Contact with Alert Status, Secondary Contact and Aesthetics are all supported. Fish Consumption is not assessed.</u>
Additional Contact Information	Names, addresses, phone numbers, and e-mail for local state and federal resource agencies	(use new Contacts Form and reference that here)
	Names, addresses, phone numbers, and e-mail for local non-governmental stakeholders	(recommend putting these in a separate document and referencing it here)

<i>Photographs and Maps</i>	Photographs of key features of the facility and each of the designated zones of effect	<u>No new photographs have been provided since the application for certification contained nearly 40 and none of those have changed since they were taken. In addition, the 2016 FERC Environmental Inspection Report also contains photographs, maps and aerial photos of the Project</u>
	Maps, aerial photos, and/or plan view diagrams of facility area and river basin	<u>See attachments</u>

FACILITY CONTACTS FORM

1. All applications for LIHI Certification must include complete contact information to be reviewed.

Project Owner: Essential Power, LLC	
Name and Title	Kim Marsili, General Manager
Company	Essential Power Massachusetts, LLC
Phone	(413) 730-4721
Email Address	Kim.Marsili@essentialpowerllc.com
Mailing Address	15 Agawam Avenue, West Springfield, Massachusetts 01089
Project Operator (if different from Owner):	
Name and Title	
Company	
Phone	
Email Address	
Mailing Address	
Consulting Firm / Agent for LIHI Program (if different from above):	
Name and Title	William P. Short III, Consultant
Company	
Phone	(917) 206-0001
Email Address	w.shortiii@verizon.net
Mailing Address	P.O. Box 237173, New York, New York 10023
Compliance Contact (responsible for LIHI Program requirements):	
Name and Title	Kim Marsili, General Manager
Company	Essential Power Massachusetts, LLC
Phone	(413) 730-4721
Email Address	Kim.Marsili@essentialpowerllc.com
Mailing Address	15 Agawam Avenue, West Springfield, Massachusetts 01089
Party responsible for accounts payable:	
Name and Title	Kim Marsili, General Manager
Company	Essential Power Massachusetts, LLC
Phone	(413) 730-4721
Email Address	Kim.Marsili@essentialpowerllc.com
Mailing Address	15 Agawam Avenue, West Springfield, Massachusetts 01089

2. Applicant must identify the most current and relevant state, federal, provincial, and tribal resource agency contacts (copy and repeat the following table as needed).

Agency Contact (Check area of responsibility: Flows __, Water Quality __, Fish/Wildlife Resources __, Watersheds __, T/E Spp. __, Cultural/Historic Resources __, Recreation X):	
Agency Name	Massachusetts Department of Fish and Game
Name and Title	John ("Jack") P. Sheppard, Director
Phone	(617) 727-1843
Email address	jack.sheppard@state.ma.us
Mailing Address	1440 Soldiers Field Road, Brighton, Massachusetts 02134-1021

Agency Contact (Check area of responsibility: Flows X , Water Quality X , Fish/Wildlife Resources X , Watersheds __, T/E Spp. __, Cultural/Historic Resources __, Recreation __):	
Agency Name	United States Fish and Wildlife Service
Name and Title	Melissa Grader, Fish and Wildlife Biologist
Phone	(413) 548-9138
Email address	Melissa_Grader@fws.gov
Mailing Address	103 East Plumtree Road, Sunderland, MA 01375

Agency Contact (Check area of responsibility: Flows X , Water Quality X , Fish/Wildlife Resources __, Watersheds __, T/E Spp. __, Cultural/Historic Resources __, Recreation __):	
Agency Name	Massachusetts Department of Environmental Protection
Name and Title	Robert Kubit
Phone	(508) 767-2854
Email address	robert.kubit@state.ma.us
Mailing Address	627 Main Street, Worcester, Massachusetts 01608

Agency Contact (Check area of responsibility: Flows X , Water Quality __, Fish/Wildlife Resources X , Watersheds __, T/E Spp. __, Cultural/Historic Resources __, Recreation __):	
Agency Name	Massachusetts Division of Fisheries and Wildlife
Name and Title	Caleb Slater, Massachusetts Division of Fisheries and Wildlife
Phone	(508) 389-6331
Email address	Caleb.Slater@MassMail.State.MA.US
Mailing Address	100 Hartwell Street, Suite 230, West Boylston, MA 01583

Agency Contact (Check area of responsibility: Flows __, Water Quality __, Fish/Wildlife Resources __, Watersheds __, T/E Spp. X , Cultural/Historic Resources __, Recreation __):	
Agency Name	Massachusetts Division of Fisheries and Wildlife
Name and Title	Thomas French, Asst. Director of DFW - for NHESP
Phone	(508) 389-6360
Email address	tom.french@state.ma.us
Mailing Address	1 Rabbit Hill Road, Westborough, Massachusetts 01581

Agency Contact (Check area of responsibility: Flows __, Water Quality __, Fish/Wildlife Resources __, Watersheds __, T/E Spp. __, Cultural/Historic Resources X , Recreation __):	
Agency Name	Massachusetts Historical Commission
Name and Title	Brona Simon, State Historic Preservation Officer
Phone	(617) 727-8470
Email address	mhc@sec.state.ma.us
Mailing Address	220 Morrissey Blvd, Boston, MA 02125

Matrix of Alternative Standards Template:
(Please duplicate this table for each Zone of Effect)

Facility Name: Gardners Falls Project

Zone of Effect: Impoundment

Criterion		Alternative Standards				
		1	2	3	4	Plus
A	Ecological Flow Regimes		X	X		
B	Water Quality		X			
C	Upstream Fish Passage	X				
D	Downstream Fish Passage		X	X		
E	Watershed and Shoreline Protection		X			
F	Threatened and Endangered Species Protection		X			
G	Cultural and Historic Resources Protection		X			
H	Recreational Resources		X			

Applicants must complete a Standards Matrix for each designated zone of effect; shaded cells indicate no such standard is available for that criterion.



Tailrace Of Deerfield #3

Impoundment

Dam

Downstream Fish Passage

Bypass Reach

© 2016 Google

Imagery Date: 5/10/2014

1992

42°35'46.14" N 72°43'54.10" W elev 99 m



Eye alt 1.38 km

Matrix of Alternative Standards Template:
(Please duplicate this table for each Zone of Effect)

Facility Name: Gardners Falls Project

Zone of Effect: Bypassed Reach

Criterion		Alternative Standards				
		1	2	3	4	Plus
A	Ecological Flow Regimes		X	X		
B	Water Quality		X			
C	Upstream Fish Passage	X				
D	Downstream Fish Passage		X	X		
E	Watershed and Shoreline Protection		X			
F	Threatened and Endangered Species Protection		X			
G	Cultural and Historic Resources Protection		X			
H	Recreational Resources		X			

Applicants must complete a Standards Matrix for each designated zone of effect; shaded cells indicate no such standard is available for that criterion.



Impoundment

Dam

Downstream Fish Passage

Bypass Reach

Power Canal

Gardner Falls Station Canal Reservoir

Power House

Tailrace of Gardners Falls



Matrix of Alternative Standards Template:
(Please duplicate this table for each Zone of Effect)

Facility Name: Gardners Falls Project

Zone of Effect: Deerfield River Below Tailrace

Criterion		Alternative Standards				
		1	2	3	4	Plus
A	Ecological Flow Regimes		X	X		
B	Water Quality		X			
C	Upstream Fish Passage	X				
D	Downstream Fish Passage		X	X		
E	Watershed and Shoreline Protection		X			
F	Threatened and Endangered Species Protection		X			
G	Cultural and Historic Resources Protection		X			
H	Recreational Resources		X			

Applicants must complete a Standards Matrix for each designated zone of effect; shaded cells indicate no such standard is available for that criterion.



Tailrace of Gardners Falls
ver House

Uppermost Portion of Deerfield #2 Impoundment



© 2016 Google

Imagery Date: 5/10/2014



42°35'08.79" N 72°43'05.40" W elev 94 m

Eye alt 1.46 km

Table B-2

B.2.1 Ecological Flow Standards

The instructions in Table B-2 identify information needed to meet the Ecological Flow Regimes criterion and to satisfy its goal. The applicant should provide only the information associated with the standard selected for a designated zone of effect. If the PLUS standard is also selected for this criterion, the information associated with that standard must also be provided. If more than one ZoE is designated for an application, this process should be repeated for other zones.

Table B-1. Information Required to Support Ecological Flows Standards.

Criterion	Standard	Instructions
A	2	<p><u>Agency Recommendation (see Appendix A for definitions):</u></p> <ul style="list-style-type: none"> • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally stringent). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. • Explain how the recommendation relates to agency management goals and objectives for fish and wildlife. • Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).
A	3	<p><u>Limited Storage:</u></p> <ul style="list-style-type: none"> • Explain the calculation of active storage capacity and retention time (storage/flow), including data sources. • Provide the name and published reference for the methodology used, including developer of the methodology and several successful, recent applications, and how it has been regionally accepted. • Provide the calculations used to derive the final flow, including data sources and any pre-processing applied.

There has been no change in the mode of operation of the Facility (limited pond-and-release) since it was certified by LIHI in 2011. The latest demonstration of compliance of the Project's minimum flow requirement is attached at the end of the Application. FERC's Environmental Inspection Report, dated August 18, 2016, is also attached at the end of the Application. The FERC officials found that the licensee appeared to be in compliance with Article 401 and 402 of its license. The FERC officials found that no follow-up on any aspect of Flow matters was necessary.

In response to the request for previous documentation related to Flows, the following highlighted (in **blue**) text or computer files should be carefully read by the reviewer and are may be found in “Application of Gardners Falls Project for Certification by the Low Impact Hydropower Institute, dated February 2, 2011.”

Item	Title of Document
2	Appendix 1-1, FERC order issuing new license, issued April 4, 1997
3	Appendix 1-2 FERC order approving and modifying minimum flow monitoring plan, issued May 4, 1998
16	Appendix 3-2, Mode of Operation
18	Appendix 3-4, Site Plan of the Facility
19	Appendix A, Flows
20	Appendix A-1, Demonstration of Minimum Flows

Table B-3

B.2.2 Water Quality Standards

The instructions in Table B-3 identify information needed to meet the Water Quality criterion and to satisfy its goal. The applicant should provide only the information associated with the standard selected for a designated zone of effect. If the PLUS standard is also selected for this criterion, the information associate with that standard must also be provided. If more than one ZoE is designated for an application, this process should be repeated for other zones.

Table B-2. Information Required to Support Water Quality Standards.

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
B	2	<p><u>Agency Recommendation:</u></p> <ul style="list-style-type: none"> • If facility is located on a Water Quality Limited river reach, provide an agency letter stating that the facility is not a cause of such limitation. • Provide a copy of the most recent Water Quality Certificate, including the date of issuance. • Identify any other agency recommendations related to water quality and explain their scientific or technical basis. • Describe all compliance activities related to the water quality related agency recommendations for the facility, including on-going monitoring, and how those are integrated into facility operations.

There has been no change in the Water Quality of the Facility since it was certified by LIHI in 2011. The latest Massachusetts DFW report of the status of the Project's Water Quality, Sections 303(d), 305(b) and 314 waters, is attached at the end of the Application. The status for the Project's waters is Support for all relevant categories. The waters are classified as meeting the standards of Section 303 (b).

In response to the request for previous documentation related to Water Quality, the following highlighted (in **blue**) text or computer files should be carefully read by the reviewer and are may be found in "Application of Gardners Falls Project for Certification by the Low Impact Hydropower Institute, dated February 2, 2011."

Item	Title of Document
2	Appendix 1-1, FERC order issuing new license, issued April 4, 1997
18	Appendix 3-4, Site Plan of the Facility
21	Appendix B, Water Quality
22	Appendix B-1, MDEP Water Quality Certificate, issued December 14, 1994

Table B-4

B.2.3 Upstream Fish Passage Standards

The instructions in Table B-4 identify information needed to meet the Upstream Fish Passage criterion and to satisfy its goal. The applicant should provide only the information associated with the standard selected for a designated zone of effect. If the PLUS standard is also selected for this criterion, the information associated with that standard must also be provided. If more than one ZoE is designated for an application, this process should be repeated for other zones.

In all cases, the applicant shall list all migratory fish species (for example, anadromous, catadromous, and potamodromous species) that occur now or have occurred historically at the Facility.

Table B-3. Information Required to Support Upstream Fish Passage Standards.

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
C	2	<p><u>Agency Recommendation:</u></p> <ul style="list-style-type: none"> Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally stringent). Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented.

There has been no change in the Upstream Fish Passage requirement of the Facility since it was certified by LIHI in 2011. At that time, no Upstream Fish Passage requirement had been imposed and only would be imposed if an upstream fish passage requirement was imposed on the Deerfield #2 Project, the immediately downstream dam.

The Deerfield River Watershed Assessment Report, 2004-2008, lists just five migratory fish that occur now or have occurred historically at the Facility. These fish are the Atlantic salmon, the American eel, the American shad, the sea lamprey and the blueback herring

In response to the request for previous documentation related to the Upstream Fish Passage requirement, the following highlighted (in **blue**) text or computer files should be carefully read by the reviewer and are may be found in “Application of Gardners Falls Project for Certification by the Low Impact Hydropower Institute, dated February 2, 2011.”

Item	Title of Document
2	Appendix 1-1, FERC order issuing new license, issued April 4, 1997
4	Appendix 1-3, FERC order approving and modifying revised fish passage plan, issued May 4, 1998

18	Appendix 3-4, Site Plan of the Facility
19	Appendix A, Flows
20	Appendix A-1, Demonstration of Minimum Flows
23	Appendix C, Fish Passage and Protection
24	Appendix C-1, Fish Passage Effectiveness Study

Table B-5

B.2.4 Downstream Fish Passage and Protection Standards

The instructions in Table B-4 identify information needed to meet the Downstream Fish Passage and Protection criterion and to satisfy its goal. The applicant should provide only the information associated with the standard selected for a designated zone of effect. If the PLUS standard is also selected for this criterion, the information associated with that standard must also be provided. If more than one ZoE is designated for an application, this process should be repeated for other zones.

In all cases, the applicant shall list all fish species (for example, riverine, *anadromous*, *catadromous*, and *potamodromous*) that occur now or have occurred historically in the area affected by the Facility.

Table B-4. Information Required to Support Downstream Fish Passage Standards.

Criterion	Standard	Instructions
D	2	<p><u>Agency Recommendation:</u></p> <ul style="list-style-type: none"> • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally stringent). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is part of a Settlement Agreement or not. • Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented.
D	3	<p><u>Best Practice / Best Available Technology:</u></p> <ul style="list-style-type: none"> • Describe the downstream fish passage technologies that have been deployed and are in operation, and justify why they qualify as best practices or best available technology. • Identify all the migratory fish species in the area and explain how the downstream fish passage facilities provide adequate and safe passage for them. • Describe the monitoring and effectiveness activities that have been or are being conducted for the downstream passage facilities.

There has been a change in the Downstream Fish Passage requirement of the Facility since it was certified by LIHI in 2011. The Project's prior Downstream Fish Passage requirement was suspended in May 2016 but will be re-imposed if Massachusetts DFW restarts its stocking efforts of Atlantic Salmon upstream of the Project. The relevant FERC order on the suspension of downstream fish passage and the reasons for that suspension is attached at the end of the Application. More information on this change can also be found in the Fish and Wildlife Resources section of FERC's Environmental Inspection Report, dated August 18, 2016, of which a copy is also attached at the end of the Application. The FERC officials found that no follow-up on any aspect of the Project was necessary.

In response to the request for previous documentation related to the Upstream Fish Passage requirement, the following highlighted (in **blue**) text or computer files should be carefully read by the reviewer and are may be found in “Application of Gardners Falls Project for Certification by the Low Impact Hydropower Institute, dated February 2, 2011.”

Item	Title of Document
2	Appendix 1-1, FERC order issuing new license, issued April 4, 1997
4	Appendix 1-3, FERC order approving and modifying revised fish passage plan, issued May 4, 1998
5	Appendix 1-4, FERC order approving and modifying fish passage effectiveness monitoring plan, issued May 4, 1998
8	Appendix 1-7, FERC order approving and modifying plunge pool plan, issued January 21, 1999
10	Appendix 1-9, FERC order approving final downstream fish passage effectiveness report and recommended modifications, issued June 14, 2001
18	Appendix 3-4, Site Plan of the Facility
19	Appendix A, Flows
20	Appendix A-1, Demonstration of Minimum Flows
23	Appendix C, Fish Passage and Protection
24	Appendix C-1, Fish Passage Effectiveness Study

Table B-6

B.2.5 Shoreline and Watershed Protection Standards

The instructions in Table B-6 identify information needed to meet the Shoreline and Watershed Protection criterion and to satisfy its goal. The applicant should provide only the information associated with the standard selected for a designated zone of effect. If the PLUS standard is also selected for this criterion, the information associated with that standard must also be provided. If more than one ZoE is designated for an application, this process should be repeated for other zones.

Table B-5. Information Required to Support Shoreline and Watershed Protection Standards.

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
E	2	<p><u>Agency Recommendation:</u></p> <ul style="list-style-type: none"> • Provide copies or links to any agency recommendations or management plans that are in effect related to protection, mitigation, or enhancement of shoreline surrounding the facility (e.g., Shoreline Management Plans). • Provide documentation that indicates the facility is in full compliance with any agency recommendations or management plans that are in effect.

There has been no change in the Shoreline and Watershed Protection requirement of the Facility since it was certified by LIHI in 2011. The latest demonstration of compliance of the Project's Shoreline and Watershed Protection requirement is attached at the end of the Application where Essential states that there was no change in land use upstream or downstream of the Project during 2016.

In response to the request for previous documentation related to the Shoreline and Watershed Protection requirement, the following highlighted (in **blue**) text or computer files should be carefully read by the reviewer and are may be found in "Application of Gardners Falls Project for Certification by the Low Impact Hydropower Institute, dated February 2, 2011."

Item	Title of Document
2	Appendix 1-1, FERC order issuing new license, issued April 4, 1997
6	Appendix 1-5, FERC order approving recreational use, erosion and sediment control plan, issued August 3, 1998
18	Appendix 3-4, Site Plan of the Facility
25	Appendix D, Watershed Protection
26	Appendix D-1, Demonstration of Watershed Protection

Table B-7

B.2.6 Threatened and Endangered Species Standards

The instructions in Table B-7 identify information needed to meet the Threatened and Endangered Species criterion and to satisfy its goal. The applicant should provide only the information associated with the standard selected for a designated zone of effect. If the PLUS standard is also selected for this criterion, the information associated with that standard must also be provided. If more than one ZoE is designated for an application, this process should be repeated for other zones.

In all cases, the applicant shall identify all listed species in the facility area based on current data from the appropriate state and federal natural resource management agencies.

Table B-6. Information Required to Support Threatened and Endangered Species Standards.

Criterion	Standard	Instructions
F	2	<p><u>Finding of No Negative Effects:</u></p> <ul style="list-style-type: none"> Identify all listed species in the facility area based on current data from the appropriate state and federal natural resource management agencies. Provide documentation of a finding of no negative effect of the facility on any listed species in the area from an appropriate natural resource management agency.

The US FWS reports that there are no threatened and endangered species located in the Project's area. A copy of that report may be found at the end of the Application as well as at https://www.fws.gov/newengland/EndangeredSpec-Consultation_Project_Review.htm.

According to the Massachusetts DFW, there are no threatened and endangered fish species in the Massachusetts portion of the Deerfield River Watershed. Below is a list of the fish species in this portion of the Deerfield River Watershed. The latest copy of the Deerfield River Watershed report may be found at the end of the Application. A MESA Information Request Form has been completed and filed with the Massachusetts DFW. Once the Massachusetts DFW has completed its review, those results will be included in this re-certification and, if necessary, the conclusions updated.

Table 3.3.2-2: Fish Species Present in the Massachusetts portion of the Deerfield River Watershed
(Source: Hartel et al 2002)

Species	Distribution	Occurrence	Status
Sea lamprey	Mainstem, Green River	Native	
American eel	Mainstem, Chickley, Mill Brook, Clesson Brook, South River, E. Branch North River, Green River	Native	
Gizzard shad	Mainstem	Native	

Common carp	Mainstem, Green River	Introduced	
Eastern silvery minnow	Mainstem	Native	Special Concern
Golden shiner	Mainstem, Cold River, Pelham Brook, Mill Brook, South River, North River, Green River Native Common shiner Mainstem, Cold River, Mill Brook, Clesson Brook, South River, North River, Green River	Native	
Common shiner	Mainstem, Cold River, Mill Brook, Clesson Brook, South River, North River, Green River	Native	
Bridle shiner	Green River	Native	Special Concern
Mimic shiner	Mainstem	Introduced	
Spottail shiner	Mainstem, Green River	Native	
Northern redbelly dace	Green River	Native	Endangered
Blacknose dace	All	Native	
Longnose dace	All	Native	
Creekchub	All	Native	
Fallfish	Mainstem, Clesson Brook, North River, South River, Green River	Native	
Longnose sucker	Mainstem, Cold River, Pelham Brook, Mill Brook, Clesson Brook, North River, South River	Native	Special Concern
White sucker	All	Native	
Brown bullhead	All		
Channel catfish	Mainstem, South River	Introduced	
Channel catfish	Mainstem, South River	Introduced	
Chain pickerel	Cold River, Chickley River, Pelham Brook, North River, South River, Green River	Native	
Northern pike	Mainstem only	Introduced	
Rainbow trout	Mill Brook, Clesson Brook	Introduced (Reproducing populations)	
Rainbow trout	Mainstem, North River	Mainstem, North River	
Atlantic salmon	Mainstem, Cold River, South River, Green River	Stocked (nonreproducing)	
Brown trout	All	Introduced (some Reproducing and some Stocked only)	

Brook trout	All	Native (some Reproducing and some Stocked only)	
Banded killifish	Mainstem	Native	
Slimy sculpin	All	Native	
Rock bass	Mainstem	Introduced	
Redbreast sunfish	Mainstem	Native	
Pumpkinseed	Mainstem, Cold River, Pelham Brook, Chickley River, South River, Green River	Native	
Bluegill	Mainstem, Green River, South River	Introduced	
Smallmouth bass	Mainstem, Cold River, Pelham Brook, Chickley River, North River, South River, Green River	Introduced	
Largemouth bass	Mainstem, Chickley River, South River	Introduced	
Black crappie	Mainstem, Pelham Brook, South River	Introduced	
Tessellated darter	Mainstem, North River, South River, Green River	Native	
Yellow perch	Mainstem, Cold River, Chickley River, North River, South River, Green River	Native	

In response to request for documentation, the following highlighted (in **blue**) text or computer files should be carefully read by the reviewer and are may be found in “Application of Gardners Falls Project for Certification by the Low Impact Hydropower Institute, dated February 2, 2011.”

Item	Title of Document
2	Appendix 1-1, FERC order issuing new license, issued April 4, 1997
18	Appendix 3-4, Site Plan of the Facility
27	Appendix E, Threatened and Endangered Species Protection

Table B-8

B.2.7 Cultural and Historic Resources Standards

The instructions in Table B-8 identify information needed to meet the Cultural and Historic Resources criterion and to satisfy its goal. The applicant should provide only the information associated with the standard selected for a designated zone of effect. If the PLUS standard is also selected for this criterion, the information associated with that standard must also be provided. If more than one ZoE is designated for an application, this process should be repeated for other zones.

In all cases, the applicant shall identify all cultural and historic resources that are on facility owned property or that may be affected by facility operations.

Table B-7. Information Required to Support Cultural and Historic Resources Standards.

Criterion	Standard	Instructions
G	2	<p><u>Approved Plan:</u></p> <ul style="list-style-type: none"> • Provide documentation of all approved state, provincial, federal, and recognized tribal plans for the protection, enhancement, and mitigation of impacts to cultural and historic resources affected by the facility. • Document that the facility is in compliance with all such plans.

There has been a minor change in the Cultural Resources Management Plan of the Facility since it was certified by LIHI in 2011. This change was necessitated by damage done by Hurricane Irene to historic structures located in the Project area. More information on this change can be found in the Cultural Resources section of FERC's Environmental Inspection Report, dated August 18, 2016, of which a copy is attached at the end of the Application. The FERC officials found that no follow-up on any aspect of Cultural Resources matters was necessary.

In response to the request for previous documentation related to the Recreational Resource requirement, the following highlighted (in **blue**) text or computer files should be carefully read by the reviewer and are may be found in "Application of Gardners Falls Project for Certification by the Low Impact Hydropower Institute, dated February 2, 2011.

Item	Title of Document
2	Appendix 1-1, FERC order issuing new license, issued April 4, 1997
7	Appendix 1-6, FERC order approving cultural resources management plan, issued November 17, 1998
18	Appendix 3-4, Site Plan of the Facility
28	Appendix F, Cultural Resource Protection
29	Appendix F-1, Demonstration of Cultural Resource Protection Compliance

Table B-9

B.2.8 Recreational Resources Standards

The instructions in Table B-9 identify information needed to meet the Recreational Resources criterion and to satisfy its goal. The applicant should provide only the information associated with the standard selected for a designated zone of effect. If the PLUS standard is also selected for this criterion, the information associated with that standard must also be provided. If more than one ZoE is designated for an application, this process should be repeated for other zones.

Table B-8. Information Required to Support Recreational Resources Standards.

Criterion	Standard	Instructions
H	2	<p><u>Agency Recommendation:</u></p> <ul style="list-style-type: none"> • Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations. • Document that the facility is in compliance with all such recommendations and plans.

There has been no change in the Recreational Resource requirement of the Facility since it was certified by LIHI in 2011. The latest demonstration of compliance of the Project's Recreational Resource requirement is FERC's Environmental Inspection Report, dated August 18, 2016, of which a copy is attached at the end of the Application. The FERC officials found that no follow-up on any aspect of the Project was necessary.

In response to the request for previous documentation related to the Recreational Resource requirement, the following highlighted (in **blue**) text or computer files should be carefully read by the reviewer and are may be found in "Application of Gardners Falls Project for Certification by the Low Impact Hydropower Institute, dated February 2, 2011.

Item	Title of Document
2	Appendix 1-1, FERC order issuing new license, issued April 4, 1997
6	Appendix 1-5, FERC order approving recreational use, erosion and sediment control plan, issued August 3, 1998
9	Appendix 1-8, FERC order approving recreation plan in part under article 406, issued April 18, 2001
11	Appendix 1-10, FERC order approving revised recreation plan, issued October 18, 2001
12	Appendix 1-11, Memorandum of Agreement Between Consolidated Edison Energy Massachusetts, Inc. and MDEM
13	Appendix 1-12, FERC Environmental Inspection Report, dated October 26, 2004
18	Appendix 3-4, Site Plan of the Facility
30	Appendix G, Recreation

31	Appendix G-1, Demonstration of Recreation Compliance
32	Appendix G-2, Existing Recreational Facilities

Sworn Statement and Waiver Form

SWORN STATEMENT

As an Authorized Representative of Essential Power Massachusetts, LLC, the Undersigned attests that the material presented in the application is true and complete.

The Undersigned acknowledges that the primary goal of the Low Impact Hydropower Institute's Certification Program is public benefit, and that the LIHI Governing Board and its agents are not responsible for financial or other private consequences of its certification decisions.

The undersigned further acknowledges that if certification of the applying facility is issued, the LIHI Certification Mark License Agreement must be executed prior to marketing the electricity product as LIHI Certified.

The undersigned Applicant further agrees to hold the Low Impact Hydropower Institute, the Governing Board and its agents harmless for any decision rendered on this or other applications, from any consequences of disclosing or publishing any submitted certification application materials to the public, or on any other action pursuant to the Low Impact Hydropower Institute's Certification Program.

Company Name: Essential Power Massachusetts, LLC

Authorize Representative Name: Kim C Marsili Title: General Manager

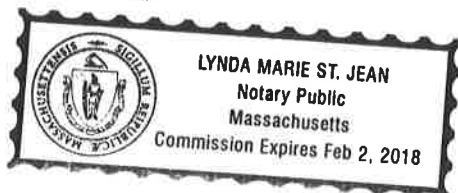
State of MA

County of Hampden

On this, the 2 day of March, 2017, before me a notary public, the undersigned officer, personally appeared Kim Marsili, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same for the purposes therein contained.

In witness hereof, I hereunto set my hand and official seal.

Notary Public: Lynda Marie St. Jean



ATTACHMENTS TO LIHI RE-CERTIFICATION

1. 2016 Demonstration of Minimum Flow, Dated January 11, 2017
2. Massachusetts Year 2014 List of Integrated Waters
3. FERC Order Modifying And Suspending License Articles 403 And 404, Issued May 16, 2106
4. 2016 Demonstration of Watershed Protection, Dated January 11, 2017
5. Deerfield River Watershed Assessment Report, 2004-2008
6. US FWS Federally Listed Endangered and Threatened Species in Massachusetts
7. Gardners Falls MESA Information Request Form, Dated February 28, 2017
8. 2012 Demonstration of Cultural Resources Activities, Dated February 29, 2012
9. Kleinschmidt Letter Regarding Recreation Report, Dated March 24, 2016
10. 2016 FERC Form 80 Recreation Report, Dated March 23, 2016
11. FERC Environmental Inspection Report, Dated August 18, 2016

LIST OF APPENDICES FROM LIHI CERTIFICATION

1. Appendix 1-1, FERC order issuing new license, issued April 4, 1997
2. Appendix 1-2 FERC order approving and modifying minimum flow monitoring plan, issued May 4, 1998
3. Appendix 1-3, FERC order approving and modifying revised fish passage plan, issued May 4, 1998
4. Appendix 1-4, FERC order approving and modifying fish passage effectiveness monitoring plan, issued May 4, 1998
5. Appendix 1-5, FERC order approving recreational use, erosion and sediment control plan, issued August 3, 1998
6. Appendix 1-6, FERC order approving cultural resources management plan, issued November 17, 1998
7. Appendix 1-7, FERC order approving and modifying plunge pool plan, issued January 21, 1999
8. Appendix 1-8, FERC order approving recreation plan in part under article 406, issued April 18, 2001
9. Appendix 1-9, FERC order approving final downstream fish passage effectiveness report and recommended modifications, issued June 14, 2001
10. Appendix 1-10, FERC order approving revised recreation plan, issued October 18, 2001
11. Appendix 1-11, Memorandum of Agreement Between Consolidated Edison Energy Massachusetts, Inc. and MDEM
12. Appendix 1-12, FERC Environmental Inspection Report, dated October 26, 2004
13. Appendix 2, Agency Contacts
14. Appendix 3-1, Description of the Facility
15. Appendix 3-2, Mode of Operation
16. Appendix 3-3, Locations of Major Items of the Facility
17. Appendix 3-4, Site Plan of the Facility
18. Appendix A, Flows
19. Appendix A-1, Demonstration of Minimum Flows
20. Appendix B, Water Quality
21. Appendix B-1, MDEP Water Quality Certificate, issued December 14, 1994
22. Appendix C, Fish Passage and Protection
23. Appendix C-1, Fish Passage Effectiveness Study
24. Appendix D, Watershed Protection
25. Appendix D-1, Demonstration of Watershed Protection
26. Appendix E, Threatened and Endangered Species Protection
27. Appendix F, Cultural Resource Protection
28. Appendix F-1, Demonstration of Cultural Resource Protection Compliance
29. Appendix G, Recreation
30. Appendix G-1, Demonstration of Recreation Compliance
31. Appendix G-2, Existing Recreational Facilities
32. Appendix H, Facilities Recommended for Removal